

Appln. No. 09/346,283
Amendment dated March 7, 2005
Reply to Office Action mailed January 11, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims (deleted text being struck through and added text being underlined):

- 1 1. (Previously Presented) An integrated circuit with a
2 micromechanical element comprising a semiconductor support substrate
3 supporting a micromechanical sensor element, a logic circuit and a
4 semiconductor visual display element, the sensor element electrically
5 connected to the logic circuit, and the logic circuit being electrically
6 connected to the semiconductor visual display element.
- 1 2. (Original) The integrated circuit of claim 1 wherein said
2 semiconductor display element comprises an array of light-emitting pn
3 junctions.
- 1 3. (Original) The integrated circuit of claim 2 wherein said light-
2 emitting pn junctions comprise GaAs light-emitting pn junctions.
- 1 4. (Previously Presented) The integrated circuit of claim 1 wherein
2 said visual display element comprises an array of semiconductor pixels
3 having pitch dimensions of less than 20 micrometers.
- 1 5. (Previously Presented) The integrated circuit of claim 2 wherein
2 said visual display element comprises an array of semiconductor pixels
3 having pitch dimensions of less than 20 micrometers.
- 1 6. (Previously Presented) The integrated circuit of claim 3 wherein
2 said visual display element comprises an array of semiconductor pixels
3 having pitch dimensions of less than 20 micrometers.

Appln. No. 09/346,283

Amendment dated March 7, 2005

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1 7. (Original) The integrated circuit of claim 1 wherein said sensor
2 element is selected from the group consisting of strain gauges, thermal
3 gauges, radiation gauges, and chemically responsive gauges.

8 through 11. (Canceled)

1 12. (Previously Presented) An integrated circuit with a
2 micromechanical element comprising a semiconductor support substrate
3 supporting a moveable micromechanical sensor element, a logic circuit and
4 a semiconductor light emitting visual display element, the moveable
5 micromechanical sensor element electrically connected to the logic circuit,
6 and the logic circuit being electrically connected to the semiconductor light
7 emitting visual display element.

1 13. (Previously Presented) An integrated circuit provided on the
2 substrate with a unified input element and display element, the integrated
3 circuit comprising:
4 a movable microengineered input element;
5 a logic circuit configured on the substrate and electrically connected
6 to the input element; and
7 an output element, the logic circuit being electrically connected to the
8 output element;
9 wherein the output element is a semiconductor visual display element.

1 14. (Previously Presented) The integrated circuit of claim 13, further
2 comprising: a semiconductor support substrate supporting the input element.

1 15. (Previously Presented) The integrated circuit of claim 14, wherein
2 the input element is a micromechanical sensor element.

Appln. No. 09/346,283

Amendment dated March 7, 2005

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1 16. (Previously Presented) The integrated circuit of claim 14, wherein
2 the input element is selected from a group consisting of an inertial sensor
3 and an accelerometer.

1 17. (Previously Presented) The integrated circuit of claim 14, wherein
2 the input element is selected from a group consisting of a strain gauge, a
3 thermal gauge, a radiation gauge, and a chemically responsive gauge.

1 18. (Previously Presented) The integrated circuit of claim 15, wherein
2 the micromechanical sensor element is configured to generate an electrical
3 signal in response to an environmental or conditional change.

1 19. (Previously Presented) The integrated circuit of claim 18, wherein
2 the output element is an array comprising pixels of less than 25
3 micrometers.

1 20. (Previously Presented) The integrated circuit of claim 18, wherein
2 the output element is an array comprising pixels configured to display
3 alphanumeric characters.

1 21. (Previously Presented) The integrated circuit of claim 20 wherein
2 the input element is a first input element, the integrated circuit further
3 comprising:
4 a second input element.

1 22. (Previously Presented) The integrated circuit of claim 1 wherein
2 the visual display element provides a visual indication of a condition sensed
3 by the sensor element.

1 23. (Previously Presented) The integrated circuit of claim 22 wherein
2 the visual indication comprises an alphanumeric character.

Appln. No. 09/346,283
Amendment dated March 7, 2005
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1 24. (Previously Presented) The integrated circuit of claim 22 wherein
2 the visual indication comprises multiple colors.

1 25. (Previously Presented) An integrated circuit provided on a
2 substrate with a unified input element and display element, the integrated
3 circuit comprising:

4 a moveable microengineered input element supported by the substrate
5 that senses a condition;

6 a logic circuit configured on the substrate and electrically connected
7 to the input element; and

8 a visual display element supported by the substrate and coupled to the
9 logic circuit that provides a visual image;

10 wherein the visual image is a visual representation of the sensed
11 condition.

1 26. (Previously Presented) An integrated circuit provided on a
2 substrate with a unified input element and display element, the integrated
3 circuit comprising:

4 a moveable microengineered input element supported by the substrate
5 that senses a condition, wherein the input element is a strain gauge;

6 a logic circuit configured on the substrate and electrically connected
7 to the input element; and

8 a visual display element having multiple light-emitting pn junctions
9 supported by the substrate and coupled to the logic circuit, wherein the
10 visual display element provides a visual image comprising a visual
11 representation of the sensed condition.

1 27. (Previously Presented) The integrated circuit of claim 1 wherein
2 said semiconductor support substrate is formed of a semiconductor.